User Group Board of Director's Meeting Planned Agenda

Thursday, February 22, 2007, CEBAF Center L102/204

9:00 Executive Session

9:30 The Budget Situation

9:30 Jlab Budget and Plans	*Christoph Leemann*

11:00 June 2007 User Group Meeting *Ron Gilman*

11:30 Outreach Update *Aidan Kelleher*

12:00 Working Lunch:

DNP Election Results	*Larry Cardman*
PAC Report	*Larry Cardman*
April Jacksonville APS Meeting	*Ron Gilman*
Thesis Prize	*Rachel Harris*
Applying for SURA Funds	*Gail Dodge*
Next UGBoD Election	*all*
Long term scheduling	*all*
Bylaws	*Ron Gilman*

13:00 Lab Reports

13:00 Hall A	*Javier Gomez*
13:20 Hall B	*Stepan Stepanyan*
13:40 Hall C	*Steve Wood*
14:00 Hall D	*Elke Aschenauer*
14:20 12 GeV Upgrade	*Will Brooks*

14:40 Special Topics

Women in Physics followup	*Todd Averett / Gail Dodge*
Changes in ResFac	*Todd Averett*
Archival data base	*Peter Bosted*
Paperless Jlab	*Peter Bosted*

15:30 Additional Regular Area Reports: *all*

16:00 Open Discussion
Tentative Dates for Next Meeting
Adjourn

Minutes

Discussion with Christoph Leeman on budget

Christoph Leemann describes the current budget situation. With the House passage of HR20, and the subsequent Senate passage of an identical bill, FY07 funding for DOE Office of Science has increased by of order $300 M over a pure continuing resolution at FY06 levels. The budget at the Jlab level at this point is approximately known, though exact numbers and the distribution within the lab remains to be worked out. The lab nuclear physics budget is about $89.5 M for FY07. $10.1 M has been restored, of the $17 M we might have been down. JLab appears to have been treated very well by the Office of Science, better than a pro-rated increase, and as well as the more public pronouncements about BNL/RHIC, thanks to lower key lobbying from Sen. Warner's office.

It appears we can maintain the schedule for getting CD2 by Sep 2007. The current budget includes PED funds for 12 GeV. These funds appear to be down about $1 M from what was originally anticipated for FY07. Ray Orbach's stated priorities were to maintain staff and run facilities, so in principle it is okay to let projects slide. But maintaining CD2 in Sep 07 keeps us on track for CD3 in Sep 08, before the election, and allows us to get construction funds in the FY09 presidential budget, the last one from the current administration. Given the need to maintain people, and the number of people now involved in 12 GeV, it appears we have the 12-GeV staff needed to keep the project on track for CD2 in Sep 07. DOE expects all project engineering design work to be completed by the end of 2008. The shutdown start is anticipated for 3Q FY12 (April 2012).

For this year, the outlook for running is that we run until June 2007, then have a three month shutdown until the end of the fiscal year. Ongoing preparations for future experiments face a similar, couple month delay. The cryomodule refurbishing intended to get us back to full 6 GeV beam should be essentially on schedule. It is anticipated that we could have 6 GeV by about March 2008.

The president's FY08 budget has a $102.4 M nuclear physics budget for Jlab, which includes $14.5 M for 12 GeV and $87.9 M for ops. With respect to operations, this is just below the expected needed inflationary increase. The outlook is for running in the low to mid 30s of weeks each year, a few weeks short of optimal. With the president's American Competitiveness Initiative, we should keep running at around 32 or 33 weeks per year. This should allow us to approximately finish currently approved 6 GeV program before the upgrade shutdown (April 2012).

Tony Thomas comments that we have basically the same amount in actual dollars to spend in FY08 as in FY07, so given inflation running goes down. This year we had 6-10 weeks of low impact running, which allowed more beam time. We are getting only about ½ of the needed inflation increase.
Larry Cardman comments that we naively ought to be back at 05 levels, but given inflation and large impact experiments we will likely be down about 20% in

output. The outlook for the following years at 6 GeV is a roughly constant 80%, compared to the previously anticipated / desirable rate. Thus one can consider our present 4-5 year backlogs to be more likely 5-6 years, or alternately one can expect that there is a good chance that about 20% of the approved program will not run before the upgrade.

In the ensuing discussion, several potential problems become clear. JLab power rates are set by the state of Virginia. Power rates have been fixed for a few years, and are low compared to many other areas. But they will be changing, and this could further impact how much we can do. There is concern that high energy running in calendar year 2008, and the high current and low beam energy requested for Qweak, can make the scheduling problem worse. Andrew Hutton indicates that we can offset higher electric rates partially by warming up the cryomodules to 4K, so the weeks of running probably are more limited by readiness of physics.

The scheduling is made more difficult by Qweak, which requires about 200 μA. While just the engineering run is currently approved for Qweak, it is expected to ultimately run for about 100 days, largely without other experiments in parallel. It is expected to start installing in 2009, and to run in 2010 and 2011. Christoph notes that the ~20 MW needed for whole facility leads to a ~5 M$ annual electric bill, so Qweak is not that extreme an increase.

Since some facility upgrades (e.g., GSI) have led to 50% cuts in operations, the board is relieved by the 80% estimate, but still concerned: tenure decisions, grant reviews, publication records, etc., need experiments to run. Cutting the output significantly for a long time can impact the vitality of the user community. The discussions leading to the FY09 budget are currently happening within DOE.

The next important step is the Long Range Plan, which is expected this summer. **We encourage users to share their excitement for JLab science with Dennis Kovar, who has a background in low-energy structure physics.**

The Virginia government has also been considering funding for the 12 GeV upgrade. Up to $3 M has been considered for civil construction for Hall D. Gordon has worked on this issue in the past and is willing to try again to help on this.

Peter Bosted suggests that the lab could save money by trying to go paperless. Christoph is sympathetic, but there is the common experience that computers have generated more paper, not less.

Peter Bosted comments that data from several old labs has largely disappeared. We need to archive data in an accessible way, and do better outreach on our achievements to the public. Christoph indicates that outreach on current experiments has been a goal that has never been attained. PR is being revamped, but it costs money.

Ron Gilman notes that several people were told by their university procurement people that JLab called and indicated there would be an end to funding on joint postdoc positions. Gail Dodge notes that this also came up about graduate students. The problem has been sorted out now, but what happened was not well handled. Christoph had not heard about this before, and will be given a report; Dennis Skopik is sending the information.

Ed Brash suggests that the lab should generate an annual report. Hall A already does. Christoph agrees that it would be good, but it is not likely to happen soon.

The board is concerned with the perception among users that the lab is becoming increasingly bureaucratic, that an increasing fraction of the staff are devoted to administrative functions, as opposed to scientific ones. There is concern in particular that the transition from SURA management to JSA management has increased this. Certainly there are increasing mandates from DOE about topics such as safety and computer security. Christoph indicates that the distribution has remained largely constant. There is a problem of how to categorize people between administration and science. Standards, requirements, and the organization have changed over time. Tony Thomas indicates that of the 35 hires since Oct 1, 90% are science and engineering. Christoph shows us staffing levels that indicate the number of people associated with various divisions has remain largely unchanged for several years, after correcting for groups that have been reorganized into different divisions.

Gordon closes our discussion with Christoph by relaying a comment from the SURA lobbyist: It is okay to go ask for something, and it is okay to go complain about something, but do not do both of them at the same time.

Discussion on User Group Meeting

The UGBoD works out a plan to have the summer User Group meeting June 18-20, between the Halls A and B meetings. We plan this year to have only plenary sessions, no parallel sessions. It is crucial to have high attendance at the meeting, and having it adjacent to collaboration meetings hopefully improves the attendance. Asking the JSA Program committee for support would also allow us to waive graduate student registration fees, hopefully also improving attendance. We need to urge the user group members to attend the meeting, and to make the program compelling to the users.

Outreach

Recent congressional issues indicate a need to communicate better. We see this need to communicate in several ways. The first is directly to those that make the decisions that affect us, the legislators and directors. The legislators need to be in a good position to argue a case for us. In order to do so, they must be prepared. We, the users, are best positioned to prepare these legislators.

In addition to directly talking to legislators, we need to do a better job of communicating with other non-physicists. One positive step in this direction is to try to get graduate students to give tours of the site. This is useful in two very important ways. First of all, this should mean fewer tours are turned away. Second, this is useful training for graduate students. Todd Averett said students at SLAC gave tours and were paid. He said it was fantastic and helped train students in exactly the way we hope it would. Perhaps the JSA program fund could be used to pay the students.

In order to help users to give public talks, we are putting together slides that will be available through the User's Group website. These slides can be used to produce a talk about Jefferson Lab physics. The slides will be sorted by categories like: general public talk, general scientist talks, and general physicist talks, with different focii for each category. But all audiences want to know what is going on behind the fence, and what all of this Jefferson Lab is good for, so all levels of talks will contain this information.

Larry suggested some Decade of Operations articles: article for *Scientific American* or *Physics Today*. In general, a good tool for getting the word out about JLab is through articles in journals/magazines of general interest – *Science*, *Nature*, *Scientific American*, *etc*.

AAAS Meeting: Largest gathering of science journalists in the country. Presentations there get noticed by the broader science journalism community. Currently JLab's presence is limited to one science writer. Giving talks at this meeting is an excellent way to get the word out about JLab physics. Kandice gave a report on her experience there, including a report of sessions featuring David Gross *et al,* that drew sufficient attention to attach a press conference to the session.

Other ways to get the word about about our physics is to provide public affairs with a one paragraph summary of the currently running experiment. Ideally, such a paragraph would be tied to use of the experimental hall – no paragraph, no beam. This paragraph is posted to the JLab website. It is also the basis of a poster to be hung in the atrium of CEBAF Center. These summaries have always been requested (examples of such summaries can be found here: http://www.jlab.org/exp_prog/experiments/summaries/). Ideally, the paragraphs would be shorter and directed towards a more general audience.

Whenever a PRL is accepted, the authors are asked for a 1 paragraph summary for AIP focus. Currently, this paragraph is not always written. However, if a summary paragraph is written before the experiment runs, it is a simple matter to modify it for this purpose.

The spokespeople bear the primary responsibility for these paragraphs. Public affairs can provide guidance. Working with public affairs to produce a good general interest summary paragraph is another great way to hone

communication skills. As soon as a paper is submitted to PRL, the spokespeople should contact Public Affairs.

Action Items:
- Require spokespeople to write one paragraph summary before experiement runs (can work with Public Affairs.
- Expand student tours so that no tour is turned down.
- Contact Public Affairs as soon as PRL is submitted.
- Create a presence at AAAS.

DNP election

Last year we made an effort to nominate people for the DNP ballot. Two of of three nominees were elected: Larry Cardman is chair elect and Krishna Kumar will be on the executive committee.

PAC

The plan has been to alternate 6 and 12 GeV PACs. This summer is a pure 12 GeV PAC. The first 12 GeV PAC did not bring us as far along as DOE wants on outside contributions for equipment: the goal is 10 M$ to come from non-DOE sources. This needs to be set by CD3, so there are two more 12-GeV PACs before then. At present there are not sufficient commitments to develop the base equipment. What should we do this PAC about opening up the PAC to non-base equipment commitments? Also, some people already made major commitments. Should they be required to make additional commitments to put in additional proposals?

There is concern in the PAC about how the early physics plan will reflect commitments to builders vs commissioning needs vs best science? The Halls all dealt with this issue for the CEBAF turn on back in the mid 1990s, and the anticipation is it will be handled similarly this time.

There is a concern that the summer 2006 12 GeV PAC had too much work to do.

There are conflicting concerns that people with major commitments get prevented from proposing more physics, and that too much of the physics will get tied up by people with minor commitments, which would tend to make it more difficult to get new collaborators committing to build new equipment.

UG Satellite Meeting at Jacksonville APS

We have User Group satellite meetings at fall DNP, and often at the spring APS meeting. The satellite meeting is typically run by whatever UGBoD members are attending, but it appears that none of the UGBoD members are going to Jacksonville, so there will not be a user group satellite meeting. We can revisit this by email in a few weeks, since the organization of the satellite meeting does not actually take place until about 1 month before the meeting.

Thesis Prize

We have 8 nominees. Two theses are in French, and one is accelerator physics. We plan to break the theses and the board into three groups for the first round. The winners of the first round will then be reviewed by a group of senior colleagues to pick the thesis prize winner. Rachel has distributed an evaluation guide from previous years. She will send out a reminder list of the reading assignments. The first round reviews are due March 31, so that the second round can be completed by April 30.

Applying for SURA Funds

Gail Dodge reminds us we should have a mechanism for applying for program funds. The SURA fund program has roughly doubled in size in becoming the JSA program fund, but much of these funds are expected to already be committed to the existing programs, such as the sabbatical program and graduate student fellowships.

UGBoD Election

We need to elect replacements for 3 board members whose terms end this summer, Gail Dodge, Rafaella de Vita, and Peter Bosted. We should consider re-instituting the designated theorist position. As chair, Gordon is in charge of arranging a nominating committee. The committee typically consists of three people who recently left the board. Gordon welcomes suggestions.

Hall A Report

Javier Gomez reviews the last year of running in Hall A, and the anticipated schedule of the next several months. The upcoming experiments all have some new equipment and/or modifications, and the impact of the budget on these experiments running in a timely manner is not yet clear. The UGBoD thanks Javier for a concise presentation.

Hall B Report

Stepan Stepanyan reports on Hall B. Dan Carmen has joined Hall B. Papers continue to be published. There was a successful two-photon-exchange experiment test. The FROST target is undergoing final testing. Stepan shows results for the n-Delta transition, g_1p, d(e,e'p)n, DVCs, cascade photo-production, coherent phi photo-production in deuterium (which suggests helicity is conserved). FROST is expected to run fall 2007. Engineering and design has started for CLAS 12 GeV. R&D is ongoing for detector components. A drift chamber review is scheduled for March.

The UGBoD asks if there is a conflict between Hall B and Qweak? Many Hall B experiments want to run as high in energy as possible, but Qweak likely runs

below the maximum energy. Is bleed through a problem? The UGBoD remains concerned about whether we actually can achieve the 80% now estimated for the long term schedule. Given that the schedule tends to be driven by the larger impact experiments, we wonder if the overall physics output of the lab and the health of the user group would benefit from partial scheduling of more smaller experiments.

Hall C Report

Hall C has 240 approved days, which includes only the Qweak engineering run, not the expected 100 days of physics. Hall C has been averaging 60 PAC days per year, and anticipates 70 PAC days per year for future years. The schedule for the next few years includes all large installation experiments.

The recent G0 backward angle measurement had accidental rates problems with deuterium, from neutrons from deuterium interacting with boro-sillicate glass in the Cerenkov phototubes, and scintillating. Quartz tubes were quieter; with a factor of 2 improvement in net good rate. Transverse polarized beam measurements showed a 2-photon exchange asymmetry much larger than the backward angle parity violation, and roughly agreeing with calculations. The hypernuclear experiment has seen 28Al and 7He hypernuclei. The baryon resonance excitation experiment analyzed some higher lying resonances, in addition to the Δ(1232). Resonance spin structure measurements determined d_2.

Hardware has been upgraded. HMS phototubes were replaced, control systems upgraded, and new magnet power supplies ordered, including hypernuclear and Qweak supplies. A new heat exchanger is being built to share between Halls A and C for high power experiments to save cooling power.

Standard experiments run to this summer. Gep is basically ready to go, Gep and 2-gamma-exchange (and maybe RCS if it fits in) start Oct 1 or so. The BETA detector is under development, for use by SANE and up to three other experiments in 2008, depending on how many fit into the schedule. The third hypernuclear experiment, using a new spectrometer from Japan, runs in 2009. Qweak installation starts in 2009, with running through early 2011. Before the 12 GeV shutdown in 2012, there is likely a little time for Gen, or for the SANE set of experiments to finish.

The UGBoD is concerned that there appears to be a strong possibility of losing important A rated experiments in Hall C due to the tightness of the schedule, and in Halls A and B due to having to schedule concurrently with Qweak.

Hall D Report

Hall D staff is up to 7 FTEs, though staff are generally part time Hall D, and part time 6-GeV physics. There are four techs involved, and support from electronics and detector groups. There is still a need for new collaborators. The Hall D

detector has nearly four pi coverage with a calorimeter surrounding straw chambers at larger angles, and cathode readout chambers, Cerenkov, etc in forward angles. Work is continuing on PID detectors. For example, the Cerenkov might be a conventional gas system or a RICH. SiPMTs are being tested for calorimeter readout. The chamber review is March 07. The PID review is in April or May. A CD-2 review will be during the summer. There are good interactions between the collaboration and accelerator people on simulations of the effects of tails of beam and the beam pipe on the experiment. The UGBoD thanks Elke Aschenauer for a brief, informative presentation.

12 GeV Report

Previous reviews called for strengthening the 12 GeV position within the lab, which has been done by putting C. Rode, the project manager, on an equal level with A. Thomas (Chief Scientist) and M Dallas (Chief Operating Officer). Allison Lung is the deputy project manager, Rolf Ent the science lead, Warren Funk the technical lead, and Steve Suhring the Integration Engineer. Designers and engineers have been added. The safety engineer for 12 GeV starts in March.

The project is focusing on Project Enegineering and Development, now that it finally has approval to spend funds. A resource-loaded schedule has been developed, with a few thousand activity bars, for DOE. Of the $7 M in FY07 PED funds, there is $2M in R&D. Much of the money is needed for summer reviews, but if the project is ~$1 M short this year, as indicated by some initial budget estimates, it can be kept on schedule by delaying some non-critical path R&D into next year, losing a few months, and using up the time contingency.

Results are shown for beam tests of a fiber calorimeter for Hall D. Drawings of the Hall C SHMS horizontal bend magnet are shown. Recent and upcoming reviews are described. CD-2 in September leads to CD-3 before election, and construction funds in the 1st year of the next administration, FY2009.

How does the reorganization of the project, the greater prominence within the lab, affect it? It gives Christoph a much more direct connection to the project, and emphasizes its importance to review committees.

Last meeting we were told we needed 35 FTEs ASAP to keep on schedule. What has happened with hiring? The project is pretty close, in part because people have been pulled away from other, 6-GeV, jobs.

Is there an impact on the project from Swapan leaving? The project is pretty well designed, and by design it is decoupled from operations, which was Swapan's area.

Is there a potential problem with beam specs, especially with respect to parity experiments? Rolf Ent and Lee Harwood have tried to specify beam parameters, and think the requirements of CD4 and the first few years of running can be met.

But there are potential problems with the more demanding experiments in the long term.

Discussion Items

The Hall C position was advertised, but the number of applicants is much smaller than when the position was last open. A new good Hall C leader is needed.

We congratulate Swapan Chattopadhyay and Fred Dylla on their new positions. Related to this, the UGBOD is very concerned about the potential impact of very good senior people leaving the lab.

With the meeting running late, and a number of people having to leave by ~4 PM, and some topics having come up earlier, the meeting ends with some agenda items put off until next meeting.